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AUTHOR Haynes, Norris M.
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ABSTRACT

Few books have generated as much controversy as the recently published "The Bell Curve: Intelligence and Class Structure in American Life." The tremendous polarization on the issue of the relationship between intelligence quotient (IQ) to race and social class, reinforced by the book, and the potential this book has for undermining social programs designed to help the poor and disenfranchised make it worthy of attention. It is a pseudo-scientific treatise that must be considered in the sociopolitical and philosophical contexts within which it is written. Evidence suggests that "The Bell Curve" is a philosophically skewed attempt at revising and reviving the idea that nature is more significant and important in determining intelligence and survivability than is nurture. The author analyzes the book's hypotheses, which are often convincingly presented, and considers its social policy implications for the disadvantaged and children's programs. Herrnstein's and Murray's thesis of genetic inferiority and inherited cognitive deficiency is without scientific merit, and is contrary to the spirit of the American constitution. (Contains 27 references.) (SLD)

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How Skewed Is The Bell Curve?

Norris M. Haynes, Ph.D
Associate Professor
Yale Child Study Center
Director of Research
School Development Program

U.S. DEPARTMENT OF EDUCATION
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How Skewed Is The Bell Curve?

A storm of controversy developed following Arthur Jensen's 1969 article in which he attributed 80% of the variance in IQ to heredity, suggesting genetic inferiority of Blacks compared to Whites on IQ. There have been other turbulances since then which have swirled around the nature versus nurture influences on IQ, but none compares with the hurricane unleashed by the recent book The Bell Curve: Intelligence and Class Structure in American Life (Herrnstein and Murray, 1994). My analogy to a hurricane is not a mere indulgence in hyperbole or rhetoric , but is based on the tremendous polarization on the issue of the relationship of IQ to race and social class, reinforced by the book, and also on the unprecedented potential the book has for undermining important social programs designed to help the poor and disenfranchised, among whom are many innocent children. It is an 845 page (including index) pseudo-scientific treatise, that on the surface, appears impressively steeped in abundant data. The book must be considered within the socio-political and philosophical context within which it has been written, as well as in view of the policy biases of its authors regarding social programs for the disadvantaged poor in this society. It must also be considered on the merits of its theoretical framework, the research evidence in which it is grounded and the social policy implications and suggestions it offers.

The Socio-political and Philosophical context

Before the Bell Curve, Herrnstein was most remembered for his article on IQ which was published in the Atlantic Monthly in 1971, and for his book titled: IQ In The Meritocracy, published in 1973. Charles Murray is well known for his 1984 book, Losing Ground: American Social Policy 1950-1980 in which he criticized the welfare system, as many of us do, but with venom and angst against those poor among us who are the beneficiaries of welfare, and for whom society provides very little else in the way of opportunity or hope. He is also a fellow at one of the most conservative social policy think tanks in the country, the American Enterprise Institute. Additionally, the Bell Curve has been endorsed by some persons whose scholarship and racial fairness have been called into question, such as Professor J. Phillipe Rushton, a psychology professor at the University of Western Ontario who argues in his 1990 book titled: Race, Evolution

and Behavior, that Blacks have smaller heads and larger genitalia than whites accounting in part for their lower levels of intelligence, higher levels of sex drive and higher birth rates. Other supporters and colleagues in the intelligence and race business include: Professor Michael Levine of the City University of New York's City College who argues that because Blacks are less intelligent than Whites and Asians they are more inclined to be criminals and implies that Blacks should therefore be feared, and Professor Linda Gottfredson, a sociologist at the University of Delaware, who also subscribes to the Black inferiority hypothesis and who spearheaded the campaign to have 52 like-minded intelligence researchers sign on, on the Herrnstein-Murray bandwagon. The 52 signers of course included Arthur Jensen and J. Phillipe Rushton.

Murray himself has been known to speak disparagingly of the poor and of African- Americans. For example in an interview he gave while sitting in the first class cabin of an airline on his way to Aspen Colorado, sipping champagne, and glowing from the economic success of his book, he made the following comments to a reporter: " in the past, people were poor because of bad luck or social barriers, now, what's holding them back is that they are not smart enough to be physicians." He later intoned: "intelligence seems to blossom in the barest ground---. Now I know that's an odd thing to say about the inner-city, but at least they (Blacks) are going to school and they have the television on all day. You couldn't say that about Blacks 50 years ago." Later he referred to poor whites as "white trash" and made something of a confession by referring to his own work as "social science pornography." (source: New York Times Magazine, October 9, 1994, article titled: "Research or Social Science Pornography." (Quotes from pages 49-51).

It is important to note that much of the "research" and writings on IQ, genetics and race have been underwritten by the Pioneer Fund including much of the research cited in the Bell Curve. Joyce Mercer, writing in Chronicle of Higher Education, the Business and Philanthropy section (December 7, 1994), had this to say about the Pioneer Fund:

> The fund was established in 1937 by eugenicists, people who believe the human race can be improved throughselective breeding. The founders thought that the overall intelligence of American

> society was diminishing because of high birthrates among citizens with low IQs. Originally the fund's purpose was to conduct or aid research on the "problem of heredity and eugenics" and to encourage the reproduction of "white persons who settled in the original thirteen colonies". In 1985 the fund deleted the word "white" from its charter. But its detractors say the deletion did not change its focus (p. A27).

What is clear is that Herrnstein and Murray are "descendants" of a long line of geneticists, dating back to Darwin (whose theory of evolution promoted the notion of survival of the fittest) and Galton (who believed that specific forms of genius as well as criminality were inherited and that environment played a negligible role), in the 19th century, to Burt (a discredited geneticist from England who was found to have falsified IQ data), Shockley and Jensen in the 20th century. All of these individuals relentlessly argued for the superiority of one race over the other, with people of African (Negroid) descent at the bottom of the evolutionary ladder, and least intelligent. In fact, the authors acknowledge their philosophical and intellectual lineage in the book and assert quite clearly, in the following quote from the preface: "this book is about differences in intellectual capacity among people and groups and what those differences mean for America's future" (P. xxi).

The evidence suggests that the Bell Curve is another philosophically skewed attempt in a long line of efforts at revisiting and reviving the notion that nature is more significant and important in determining intelligence and survivability than nurture. However, we must guard against a purely emotional response to this book. It is extremely well written and grounded in an avalanche of correlational data, which though often spurious and misinterpreted by the authors, nonetheless appear very convincing to many. The approach that I take in the rest of this paper is to consider the hypotheses (premises) which guide the analyses, examine the research data and review the conclusions drawn. I also examine the social policy implications made with regard to programs that benefit the least socially privileged members of society, especially the many children who, armed with as much potential as their more privileged peers, struggle daily to survive and succeed in a society where they are viewed by some as

"cognitively deficient" and undeserving because they are not of the "cognitive elite" class. The critical issues raised by this book and others like it, must not be viewed or reduced to a black-white issue which can further polarize people of good will, but must be seen within the larger context of cultural and social insensitivities and hegemonies, including insensitivities and parochial attitudes around significant attributes that distinguish among people, including race, ethnicity, social class, gender and religion. Hernstein and Murray's thesis of genetic inferiority and inherited cognitive deficiency is not only without scientific merit but it also strikes at the core of America's striving to actualize Jefferson's vision that all men are created equal and endowed with certain inalienable rights to freedom, justice and equal opportunity. Herrnstein's and Murray's thesis of genetic inferiority and inherited cognitive deficiency is contrary to the spirit of the constitution and without scientific merit.

The authors ignored an important source of data on the issue of significant genetic similarities between African and European peoples, and significant genetic dissimilarities between African and Australian aborigines peoples despite very similar phenotypic characteristics such as skin color. In a recent article titled " the story in our genes" in the science column of the January 16th issue of Time magazine, Sribala Subramanian, wrote that: " a landmark global study flattens the Bell Curve, proving that racial differences are only skin deep" (p. 54). The author of this article was referring to an impressively comprehensive and scientifically sound study by population geneticists who have synthesized over 50 years of research on population genetics. The results of the study were presented in a 1000 page book titled: The History and Geography of Human Genes. The authors of the study, population geneticists Luca Cavalli-Sforza, Paolo Menozzi and Alberto Piazza, concluded that :

> once the genes for surface traits such as coloration and stature are discounted, the human "races" are remarkably alike under the skin. The variation among individuals is much greater than the differences among groups. In fact, the, the diversity among individuals is so enormous that the whole concept of race becomes meaningless at the genetic level. ---there is no scientific basis for the theories touting the genetic superiority of one population over the other (P.54).

Subramanian noted that this book was published by Princeton University Press just about the same that The Free Press publishedThe Bell Curve yet The Bell Curve got most of the press. This undoubtedly is due to its sensational value and its implications and recommendations for social policy.

The Hypotheses (Premises)

I begin this section with a direct quote from the cover of The Bell Curve:

> with relentless and unassailable thoroughness, Herrstein and Murray for the first time show that for a wide range of intractable social problems, the decisive correlation is between a high incidence of the problem and the low intelligence of those who suffer from it: this holds for school dropouts, unemployment, work-related injury, out of wedlock births, crime, and many other social problems. Though we stubbornly deny it, these social problems correlate to a significant degree with intelligence (Cover).

The first premise of the Bell Curve is that **most social problems**, especially those found among the economically and socially marginalized, **are intractable** because, according to the second premise, they **are inextricably linked to IQ**. Thus, IQ is given tremendous significance as a cause for social ills in this society, absolving social institutions of their primary and moral responsibility to meet the basic human needs of all citizens. The premises of intractability and linkage to IQ are tied to the third premise, not reflected in this quote, but pervasive throughout the book, which is that **IQ is largely inherited (60%) and cannot be altered**. Thus the poor, the uneducated, the unemployed, and African-Americans as a racial group are, to a large degree, condemned to lives of misery, inferiority and failure because, according to Herrnstein and Murray, they are not members of the "cognitive elite-- in those social pools well endowed with cognitive abilities" but are, in fact, in the judgment of the authors, products of "the perpetuation of a class of people deficient in these endowments and abilities and doomed to labor if they find work at all outside the information economy." This language, and the disparaging view of people that it reflects, is frightening and unbelievable in America in 1994, and skews the discourse on social problems and how to address them

toward a social policy agenda that is regressive and oppressive of the least socially privileged.

The Meaning and Importance of IQ

The importance of IQ in the authors' thinking is derived from their strong belief in what is referred to as the Spearman "g" (general) intelligence factor. Spearman "g" is supposedly the underlying ability to reason and think that is largely an inherited neurophysiological trait, untarnished by environmental factors, including social conditions and culture. Jensen (1985) made the case that Black-White differences in IQ is largely attributable to the inferiority of Blacks on the "g" factor, which is the inherited, physiological component of IQ. Herrnstein and Murray based most of their rationale on this notion of "g" and on Jensen's arguments. While there is general agreement among some experts in the field of psychometrics and psychology that there may be some common source of variance among different IQ tests, there is no consensus on what the nature of this source of variance is, how it is acquired or what its significance is for learning, school performance and success. Therefore, the concept of "g" is still very much a hypothetical construct.

Cattell (1985) an outstanding psychometrician and scholar who is very well known for his two factor theory of intelligence (fluid and crystallized) criticized the notion of Spearman "g" being treated as a totally inherited physiological component of intelligence, as Herrnstein and Murray, like Jensen, would have us believe. He noted that "g" has a large crystallized component, suggesting significant social and cultural influence. He also pointed out that Jensen's profuse use of the WISC and WAIS tests was misleading. Both tests have mixtures of fluid (gf) and crystallized (gc) intelligence and are heavily socially and culturally influenced. He noted that fluid intelligence is best measured by tests which are more culture fair such as the Raven matrices and the IPAT. Herrnstein and Murray have repeated this mistake in their analyses and their interpretation of data based mainly on tests such as the WISC and the WAIS. They suggest that some subtests such as backward digit span, similarities and block design, which involve such cognitive processes as visual memory and reasoning ability provide evidence of inferior cognitive abilities of African Americans on "g". However, performance on these subtests are subject to the effects of practice and coaching.

Other researchers (Borkowski and Maxwell, 1985; Bardis, 1985; Guftafsson, 1985) also question the validity of the use of "g" as a definitive measure of inherited intelligence, and how it is measured. Borkowski and Maxwell noted: " Spearman's "g" is a creature of statistics, possessing no theoretical import. It fails to yield explanatory insights (p. 221) Bardis observed:

> one remains equally skeptical and ambivalent whenit comes to instruments that measure intelligence. Notonly has sampling often been unrepresentative:conventional tests have also stressed convergent thinking, thus neglecting creativity---. When such raw dataconstitute the foundation for advanced statistical tests, how valid and reliable can the conclusions be? (p.219).

Ralph Tyler, who is well known for his work in educational assessment and who has served as Director Emeritus of the Center for Advanced Study in the Behavioral Sciences, has questioned the basic assumptions underlying intelligence tests. He noted that these assumptions "are now recognized as untenable" (ED 235883,1980, p.3).

The untenable assumptions are that:

1. school success is a dependable indication of intelligence
2. questions or problems the answers to which are not taught in school represent knowledge and abilities that the child acquires in proportion to his (her) intelligence since he (she) receives no instruction on these
3. children in the population tested encounter the kinds of questions and problems presented in the test so that the failure to answer them correctly cannot be attributed to lack of familiarity with these matters
4. scores on standardized tests of both intelligence and achievement are normally distributed in the shape of a bell curve (pp. 5-6).

The very notion of a distribution of human potential and abilities that conforms to the shape of a bell curve has also been a source of concern and disagreement. The bell curve view which is very widely accepted as a depiction of "normally distributed" traits, including intelligence, achievement and other measures of psychoeducational functioning, forces the categorization of individuals into preassigned performance ranges based on the deviation of their scores from the mean of the population or reference group. Thus, it is assumed that on any given measure, 68% of the individuals assessed by that

measure would be average (between + and -1 SD). Of the remaining 32% of the population, 16% would be above average with 1% of them being in the superior range and 16% would be below average, with 1% of them being in the deficient range. While this conceptualization of the distribution of human attributes may have served some well academically, and maybe to some extent clinically, it should not be used to determine national social policies that impact the quality of people's lives. The notion of the bell curve is limiting in its amenability to change in the human condition. It also takes measures of human characteristics and seeks to fit them on a scale of measurement best suited to more physical matter where there is much more precision of measurement and where units of measurement are more equal along a continuum. Tyler criticized the concept of the normal curve as being too static. He noted:

> Since such a test (norm referenced) indicates only differencesamong individuals, those who take the test can be arranged in rank order but rankings are not units of measurement that could be said to be equal along a continuum. On a physicalscale of weight, for example, pounds have the same value whether one weighs 50 pounds or 200 pounds, but the difference in weight between the person at the fiftieth percentile and one at the fifty-first percentile is a fraction of a pound in a normal population, while the difference between the ninety-eighth and ninety-ninth percentile is much more. In an effort to produce a scale that would have equal values along a continuum, the test constructors assumed for both intelligence and achievement tests that the distribution of the poulation of behaviors tested is a bell shaped one, the so-called normal distribution. In making this assumption, they (test constructors) were strongly influenced by Darwinian notions that the environment in a given locality is constant over a period of time, and human beings differ randomly in their capacity to adapt themselves to this environment with only the fittest surviving.---.The requirement that intelligence and achievement tests produce scores that give a normal distribution is a constraint that results in many test exercises that do not represent what most children are being taught nor their psychological functioning in common place situations. It has become clear that this assumption of the normal curve is not an acceptable one

> for the assessment of school learning or intelligent behavior. As a result of these critical appraisals, it is now clear that intelligence tests are tests of knowledge and abilities that are not in themselves innate but must be learned and that in the environment of middle class families children are more likely to learn what intelligence tests assess than are children in other environments (pp. 7-8).

On a norm referenced test, the difference between being in one percentile range as opposed to another may be one or two points on the test and knowing in which percentile range a student falls does not indicate much about the student's strengths or weaknesses with regard to the mastery of skill or content on salient tasks. With so much emphasis on IQ and where a person or group of people falls within the so-called normal distribution (bell curve), the authors of the Bell Curve, and many like-minded researchers and educators, may be missing the essential meaning of intelligence and how to validly measure what it practically represents.

Rethinking Intelligence

Beyond the arguments and disagreements over the meaning and interpretation of "g", and the viability and practical value of the bell curve view of distributed cognitive ability , the basic definition and conceptualization of intelligence have been challenged, and new, more insightful and useful formulations have been offered.

Robert Sternberg, IBM professor of psychology at Yale University has proposed a "componential" theory of intelligence which is much more dynamic and useful than traditional conceptions which view intelligence as comprising "one or more stable, fixed entities in the head" (Sternberg1983, p. 7). He argues for a conceptualization of intelligence that allows us to understand how to intervene to modify and improve cognitive functioning. He noted:

> if intelligence can be broken down into a set of underlying processes and strategies for combining these processes, then it is clear what we can do to improve intelligence: We can intervene at the level of the mental processes and teach individuals what processes to use when, how to use them, and how to combine them into

> workable strategies for task solution (Sternberg 1983, p. 7).

Sternberg proposes a triarchic model of cognitive competencies. The three components of this model are: (1) metacomponents which are "higher order executive processes" that the individual uses to plan, monitor and evaluate one's work. This is the decision making level (2) performance component which include the actual steps in executing the problem solving decisions made (3) knowledge acquisition component which includes processes involved in learning new material (Sternberg, 1983). Sternberg's approach has been adapted in teacher training programs and classroom instructional designs to improve teaching and learning in schools across the United States.

Howard Gardner, professor of education at Harvard University and director of Project Zero has proposed the existence of "multiple intelligences." He identifies seven types of intelligences: (1) Linguistic: the ability to use words effectively (2) Logical-Mathematical: the ability to use numbers effectively (3) Spatial: the capacity to perceive the visual-spatial world accurately (4) Bodily Kinesthetic: the capacity to use one's whole body to express ideas and feelings (5) Musical: the ability to perceive, discriminate, transform and express musical forms (6) Interpersonal: the capacity to perceive and distinguish the moods, intentions, motivations and feelings of other people (7) Interpersonal: the capacity to for self-knowledge and ability to act adaptively on the basis of that knowledge (Armstrong, 1994, pp 2-3; Gardner, 1993). In explaining his use of the term "intelligences" to characterize his seven competencies, in response to criticism that these may not be really intelligences but competencies, Gardner noted:

> I'm deliberately being somewhat provocative. If I'd said that there's seven kinds of competencies, people would yawn and say Yeah, yeah. But by calling them "intelligences", I'm saying that we've tended to put on a pedestal one variety called intelligence, and there's actually a plurality of them, and some are things we've never thought about as being intelligence at all (Weinreich-Haste 1985. p. 48).

Gardner connects his seven "intelligences" to brain anatomy, chemistry and neurology.

Stephen Ceci, a professor and researcher at Cornell university, supports the notion of a variety of intelligences rather than a

monolithic construct of intelligence. He speaks of multiple resource pools. He notes: " each resource pool works more or less effectively depending on aspects of the environment in which it develops" (APA Monitor, January 1995, p. 25). He stresses that IQ is very sensitive to context and that researchers should not overestimate the role of inheritance. He notes that every important aspect behavior is influenced by both biology and the environment.

Edward Zigler, developer of the Head Start program and of the Schools of the 21st century program, director of the Bush Center and Sterling professor of psychology at Yale University, notes that "heritability (of IQ) is a very loaded concept." He notes that each individual has potential that the environment helps to maximize. According to Zigler, IQ is a measure of the extent to which the environment has supported and nurtured individual potential. He sees IQ as having three components: 1. cognitive ability which is most influenced by genetics (50%) and least subject to change 2. achievement which reflects learning and knowledge acquisition based on experience and mostly influenced by the environment 3. motivation which is largely influenced by environmental factors. Zigler believes that children learn to be unmotivated due to the environmental circumstances into which they are born and in which they grow and develop. In considering these three components of intelligence and the relative contributions of genetics and environment to each, Zigler concludes that environment plays a much more significant role than genetics (APA Monitor, January 1995, p. 24).

James P. Comer, Maurice Falk Professor of Child Psychiatry, Associate Dean of the Yale Medical school and director of the leading school reform program in the country, the School Development Program, proposes a theory of development that includes multiple pathways. Although not directly addressing IQ as a construct, Comer (1988) suggests that the environment is most responsible for successful development along each of the six pathways and the effects of schooling in particular are extremely significant. The six developmental pathways identified by Comer are: physical, moral, linguistic, social/emotional, psychological and cognitive/ academic. Comer also recognizes that there is a physiological component, in the form of energy and drive which influences development along each pathway, but stresses the importance of supportive environments and the mediation of caring and sensitive adults to help children reach their fullest potential.

The value of these and other theoretical formulations and perspectives of cognitive competencies and "intelligences," is that they provide frameworks for considering intelligence that allows us to recognize individual differences and strengths and to intervene in order to improve school performance, rather than to simply categorize, classify and calumnify groups of children. Comer's and Zigler's perspectives also stress the developmental aspects of "intelligence" which too often gets lost in the debate. In any case, given the inexactness of the science surrounding intelligence, including the definition, measurement and interpretation of it, it is, in my view, professionally unethical and socially immoral to label, categorize and demean individuals based on IQ scores.

The Data

Herrnstein and Murray deserve credit for their extensive references to research studies and to the clever use of correlational data which to the unsuspecting, or to the predisposed, may appear to lend credibility to and confirmation of their basic hypotheses. Some of the studies cited do show moderate to low correlations between IQ scores and several social status variables. However, the hypotheses of intractability of social problems, linkage of problems to IQ, and the inheritability of IQ are all unsubstantiated by any convincing or irrefutable data. The voluminous amount of correlational data cited by the authors do not provide scientific substantiation of any one of these three hypotheses. The authors have been selective and incomplete in their discussions of some data, and have relied on correlational data that do not prove causation. We learn in statistics 101 that correlation does not imply causation.

The fact that two variables covary does not mean that one causes the other. A third uncontrolled variable may be influencing both. The sale of winter coats increases as home heating bills increase in the winter. There is a positive correlation between the sale of coats and the cost of heating homes. This does not suggest that the increase in coat sales causes the increase in heating bills. The reported modest correlations between IQ and social status and race, may be explained by factors that are more salient, measurable and controllable than heredity such as: testing bias, selection effects, practice effects, test anxiety and psychomometric invalidity. Additionally, the low to modest correlations cited as evidence of causality constitute weak associations accounting for much less variance in social status and

educational achievement attributable to IQ than one would expect based on the considerable social importance the authors ascribe to IQ.

There are other statistical and psychometric problems with the data on which the authors rely and on their interpretation of these data. Sylvia Johnson, editor of the Journal of Negro Education, an outstanding statistician and professor of educational psychology at Howard University, provided an extremely insightful, scholarly and balanced critique of the Bell Curve. It is worth quoting her here. She noted:

> A major problem with Herrnstein and Murray's work is the lack of sufficient reference to or appropriate interpretation of important studies that challenge the position they advance. This research has been done over a long period of time and been carried out by important scholars.---. The Bell Curve has evoked several responses, many of which seek to address seriously its authors' conclusions. These challenges may be meaningless in that they attempt to offer scientific responses to a treatise that really has no scientific basis.---. For example, Jensen's research was largely based on analyses conducted with the repeated use of an inappropriate error-variance term. That is, the error variance was determined among a general, predominantly White population rather than on variance in the specific African American population to which his inferences are addressed (p. 272).

Professor Johnson's concerns are also shared by other prominent experts in the field.

By some accounts from authors of some studies cited in the Bell Curve , Herrnstein and Murray were very selective in choosing portions of data to be included and excluded in their analyses. At a recent conference I attended at the Santa Fe Institute, one author whose work is prominently featured, expressed dismay at the partial and self-serving manner in which his study was presented in the book. He complained that the authors skewed the presentation and interpretation of his work to fit their hypotheses.

The Nature of Nurture

The area in which the Bell Curve receives its strongest and most widespread criticism is in the interpretation of the cited data and the conclusions and social policy implications drawn. Even many of those scholars who think that the data are good, question the interpretation that the authors make and the conclusions that they draw. Some Psychologists who are sympathetic toward the data, noted in the December 1994 issue of the APA monitor:

> "there are alternative solutions for the data" (Stephen Ceci of Cornell University)
> "Psychometrics is one thing and politics is another.---. The data are good but you don't have to conclude the political things the authors concluded" (Ulric Neisser of Emory University)

The authors downplay the importance of nurturing, caring environments, and supportive social programs that help to counteract the disadvantages many children face, by being born outside of the "elite class." They seek to discredit such valuable programs as Headstart, which are shown to have significant positive benefits to children and families when implemented well. They, in fact, make the point that cognitive ability, measured in terms of IQ points, determines people's value to society and their rightful place in it. They note:

> nonetheless, millions of Americans have levels of cognitive ability low enough to make their lives statistically more difficult than life is for most other people. How may policy help or obstruct them as they go about their lives? Our thesis is that it used to be easier for people of low in ability to find a valued place than it is now (p. 534).

They also note:

Inequality of endowments, including intelligence, is a reality.

> Trying to pretend that inequality does not really exist has led to disaster. Trying to eradicate inequality with artificially manufactured outcomes has led to disaster. It is time for America once again to try living with inequality, as life is lived--- (p.551).

Then the authors add a statement that contradicts and undermines their entire thesis and the essence of their book. They note:

> the success of each human life is not measured externally but internally; that of all of the rewards we can confer on

> each other, the most precious is a place as a valued fellow citizen (pp. 551-552).

How can we, as the authors suggest in the last quote, confer dignity and value to every adult citizen and every child if, as they suggest in the two earlier quotes, that because some of us have limited cognitive ability we cannot be as successful and occupy as valued a place in society, therefore, America must learn to live with inequality? This kind of contradiction is pervasive throughout the book as the authors seek to attribute every social ill to IQ but soften their assault by denying their insensitivity to the effects of the social environment on people's lives without quite acknowledging its significance.

Sylvia Johnson (1994) noted:

> the authors of The Bell Curve would have this nation cease its efforts to develop the abilities of children whom they define as unable to learn well because of low intelligence. Indeed, Herrnstein and Murray devote extensive time and pages to proving that disproportionately large numbers of poor and Black children fall into this category. What they fail to note are the effects of enriched environment on the emergence of developed abilities, and the complex interactions of such environments with heredity. They fail further in not recognizing that the issue is not determining the role heredity and environment play in developing a range of cognitive abilities, but determining the role contemporary American society causes these factors to play by the ways in which experiences of U.S. school children are structured (p.271).

The everyday lives of successful African-Americans are replete with evidence that nurture more than nature makes the difference. In his book Gifted Hands, Dr. Benjamin Carson, a young talented pediatric neurosurgeon and chairman of the department of neurosurgery at Johns Hopkins University Hospital, tells about himself as a troubled African-American youth whose life was turned around in his adolescent years by the caring and love of a devoted single mother and whose early school experiences, though difficult, were mediated by a caring teacher. Had it not been for the nurturing he received, Dr. Ben Carson could very well have been one of the 25% Black males

who are today incarcerated or at some stage of being processed through the criminal justice system, when in a fit of anger and rage he almost stabbed his best friend to death. Had Ben Carson ended up in prison as a criminal statistic, Herrnstein and Murray would have lumped him among the their class of "cognitively deficient." Dr. James P. Comer, another successful African-American male who is now the Maurice-Falk professor of child psychiatry and dean of the medical school at Yale University, tells his story in his book Maggie's American Dream. Again, a mother's love and vision, supported by a caring community of adults, nurtured James Comer's potential to become, today, one of the world's leading school reformers, educator and child development experts. There are many other examples of lives that have been changed and enriched because of nurturing environments and caring sensitive people. We cannot dismiss or deny the power of nurture.

Schooling As Nurturing

The importance of the tireless efforts of persons like James Comer, Ed Gordon, Ed Zigler, Jerome and Dorothy Singer and others, to show how powerful early learning experiences - in families, schools and through the media- are in shaping children's lives, cannot be over-stated. The many environmental sources of influence on how children think, learn, view the world and perform in school far outweigh the influence of heredity. Schooling in particular plays an enormous part in children's development and life chances. For most socioeconomically marginalized youth, education is their ticket out of poverty and to experiencing a piece of the American dream, if not becoming members of the "cognitive elite." Herrnstein and Murray would have us believe that the effects of schooling and equal educational opportunity are negligible. Their data do not substantiate this claim. Our own work in the School Development Program, at the Yale Child Study Center, the work of Robert Slavin with Success for All in Baltimore, Ted Sizer of the Coalition of Essential schools, Ed Gordon in New York, Donald Cohen, director of the Yale Child Study Center with his work on the national commission on children, Howard Gardner of Harvard's Project Zero, Robert Sternberg, and Ed Zigler at Yale, and many others continue to reinforce the importance of schooling. There is abundant evidence of effective schooling practices and educational interventions that improve student outcomes. The fixation with IQ as the measure of cognitive ability

constrains and limits the vision of what education should and must do with and for students.

In addressing the importance of education as the "way out (of poverty) and up (the social ladder)," James P. Comer (1987) noted:

> education was almost the only way up for Blacks in the past, and economic opportunity is rarely possible without it now, and will be more the case in the future" (p. 61).

Edmund Gordon (1994) reminded us that social justice, including educational equity and opportunities for positive schooling experiences influence :

> 1. the motivation to engage academic learning and to master its content;
> 2. opportunities to learn and be reinforced by academic competence and literacy;
> 3. the conditions in and under which knowledge and skills are learned, and attitudes and dispositions are developed;
> 4. the nature of the processes by which academic attitudes, dispositions, knowledges and competencies are assessed (p.5)

The opportunity to learn and to develop one's skills and potentials in a nurturing school environment is critical to academic and social success. Caring, sensitive and unbiased adults must mediate students learning, as Feurestein noted, and must help to bridge the potential-achievement gap as Vygotsky suggested in his discussions of what he called "the zone of proximal development."

Cultures, Communities and Families That Nurture Success

Asians are not inherently smarter than Blacks and Whites as Herrnstein and Murray conclude. Indeed, they do better on many measures of cognitive ability and educational attainment. That is not in dispute. They do better because their culture values hard work, perseverance, strong positive belief in themselves and a success orientation that is pervasive and strongly emphasized. In an article titled: "Are Asians Really That Smarter" Adam Smith (1987) noted:

> Why did these Asians succeed? There is a theory that the cultures of these countries are the engines of their success. All of them share Confucian values that spread

> out from China 2,500 years ago. These values encourage diligence and harmony in the work place, strong family ties, and a passion for education. The diligence in the work place is described as "a hungry spirit (Esquire Magazine, p.100).

There is other evidence that nurture rather than nature is responsible for the Asian success story. Harold Stevenson, a professor at the University of Michigan, compared students in the United States, Japan and Taiwan and found no differences in IQ but significant differences in performance on achievement measures. The Asian children, especially the Japanese, did better in math. He found that American children did progressively worse. Professor Stevenson concluded that the differences were due, not to IQ, but to home and cultural factors. Professor Dornbusch of Stanford noted, in response to data which converge on the culture and home as key factors, "my bottom line is, there's no question these Asians are working a heck of a lot harder" (EDUC p.19).

There is also the Pygmalion effect that results from the view that Asians are much smarter genetically. The expectation of superior performance may in fact lead to interactions that promote high achievement among Asians and may work in exactly the opposite way for African-Americans. High expectations breed high performance and low expectations breed low performance.

American families and communities and especially African-American families and communities must encourage, nurture and support positive attitudes towards learning and school. We must do more to communicate in unmistakable language the positive values of hard work, diligence, respect for self and others, and belief in the individual's ability to make a difference for self and others. We as a country must also ensure that there is equal opportunity for all children to learn equally well; that the quality of our educational systems and schools does not discriminate on the basis of race or class. If savage inequities continue to exist in opportunities to learn, severe disparities in learning outcomes will continue to plague our society, and genes have very little or nothing to do with that.

Conclusion

The message that the authors of The Bell Curve send is clear. There are those among us who will skew data and statistics to further their socio-political agendas. Those of us who are advocates for equality, equity, justice and the basic human rights of all people, and especially all of our children , must conduct our work with care, sensitivity, thoroughness and respect for the dignity of each individual. Sylvia Johnson (1994) expressed this point of view very well when she asserted:

> the treatment of causation and determination is a critical one because the extent to which environment is a positive factor in the development of academic abilities depends on the quality of the achievement-related interventions in the school, the home, the community. For instance, if the likelihood of success is high among people known by and important to a child, that child will have a greater probability of being successful because he or she will expect, even demand, to be successful. When education is working for the important people in a child's life in leading to economic and social well-being, the frequency of this occurrence is motivational and helps to determine the child's likelihood of similar success (p. 272).

The combined and interdisciplinary school-based and community out-reach clinical and educational work of faculty at the Yale Child Study Center, under the directorship of Dr. Donald Cohen, is a good example of resources and professional skill being coalesced around the cause of nurturing the hearts and minds of children well. The quality of interactions and learning experiences that children have in schools, at home and in settings with others who assess, judge, teach, mentor, label or make recommendations about them, influence their psychosocial and cognitive development in significant ways, even in cases where contact may be infrequent or a single occurrence.

Whether we are teachers in classrooms; psychologists or social workers in schools, private practice or mental health centers; professors and researchers at universities; community workers; politicians or policy makers in government ; or parents nurturing and caring for children at home, the message is for all of us. We have a moral obligation to recognize the dignity and potential among those individuals whose lives we affect in any way. Parents, communities

and schools in particular must together work assiduously to restore and inculcate positive cultural values of hard work, diligent study and perseverance in the face of adversity. As we have seen, this is the key to the much touted Asian success stories in America and elsewhere; not superior genes.

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